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ABSTRACT

The traditional relationships between rural and urban areas and the changes brought on by specialized rural industries discussed. The digest reviews work that has investigated the impact of farming, manufacturing, and mining on education. The effect of agricultural activity on academic achievement, especially via vocational agriculture programs, has attracted considerable interest. At least one study (Hobbs, 1987) credits vocational agriculture with developing leadership and entrepreneurial skills among students, suggesting a positive effect of a farming economy on school outcomes. Researchers also report that agriculture offers students the opportunity for part-time work, which seems to have a positive effect on grades (Charner & Fraser, 1988). Part-time farming jobs do not, however, appear to influence students' educational aspirations. The farm crisis of the 1980's may bring significant economic changes in agriculture and subsequent effects on school outcomes. Studies of the Relationship between the growth of manufacturing and school outcomes show mixed results, with at least one study (Rosenfeld, Bergman, & Rubin, 1985) associating a net loss in manufacturing jobs with an increase in educational attainment (years in school). The evidence, however, is hardly conclusive. Studies of student achievement in mining-dependent counties in Appalachia show significant differences between Appalachian and non-Appalachian areas. Although more study is needed, data (Bagby et al., 1985; DeYoung, 1985) suggest that mining economies exert a negative influence on student achievement. It is suggested that more study is necessary to better understand the relationships between education and economic development. This digest includes 10 references. (TES)

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ERIC DIGEST

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The Impact of Rural Industries on the Outcomes of Schooling in Rural America

Digest EDO-RC-89-7

IN RECENT YEARS, the reform of rural schools, like the reform of urban and suburban schools, has been urged as a means of contributing to the construction of a competitive national economy. The issue of economic development, however, differs in rural and urban America (DeYoung, 1985; Jacobs, 1984; Stephens, 1988).

The difference stems in part from the traditional relationship of rural and urban areas. Traditionally, rural areas export to cities goods such as lumber, minerals, and agricultural products, but they have also contributed the work of employees who have abandoned rural areas in search of city jobs. Moreover, some observers suggest that even when businesses transplant factories to rural areas, urban economies reap most of the benefits (Jacobs, 1984). These observers cite low-wages, export of profits, and the failure of transplanted factories to stimulate locally-based production enterprises as problems.

Rural areas differ, too, from urban areas because their economies tend to be specialized (Stephens, 1988). Though rural areas differ from one another in the type of specialized economic activity each conducts, they share the fact of specialization. Rural areas, then, contribute to the national economy in ways different from urban areas, and what benefits the national economy will not necessarily benefit the rural economy or rural schools.

For these reasons, the effect that specialized rural industries have on educational outcomes is a topic of growing interest. The purpose of this digest is to review the available literature on this emerging topic. The research reported below deals with a variety of outcomes, though those of greatest interest are academic outcomes.

What are rural industries?

Stephens (1988) reviews a typology of economic activity for nonmetropolitan counties developed by the Economic Research Service of the U.S. Department of Agriculture. The typology classifies nonmetro counties according to their principal economic activity as follows:

- farming-dependent,
- manufacturing-dependent,
- mining-dependent, and
- specialized government counties.

Farming, mining, and manufacturing are traditional activities in rural areas, and the USDA analysis confirms their continued relevance. In addition to these four types of economic activity, Stephens reported three other categories devised by Department of Agriculture researchers: persistent poverty counties, federal lands counties, and retirement counties.

This digest will review only recent work that has investigated the impact of farming, manufacturing, and mining on school outcomes. These three categories represent approximately 75% of all nonmetro counties classified by the USDA (Stephens, 1988, p. 12). First, however, let us consider briefly how economic activity of a particular sort might influence school outcomes.

How might rural industries influence educational outcomes in rural areas?

Education is generally thought to influence the economic status of a nation by cultivating good work habits and usable skills among citizens. Some observers question whether or not this general effect pertains to local economic development, and still others (for example, DeYoung, 1989) believe that economic structures are more likely to influence school outcomes than vice versa.

This dispute illustrates the wisdom of examining both alternatives, the contribution of education to economic activity, and the influence of economic activity on school outcomes. In some cases economic activity and education might contribute mutually to each other's development. In other cases, the contributions might be lopsided. In rural areas, where economies tend to be specialized, educators have the opportunity to examine the mutual influences of education and economics on one another.

With these possibilities in mind, we turn to a brief examination of recent work that bears on the influence of the rural industries of farming, manufacturing, and mining on school outcomes in rural areas.

Farming-dependent areas

In the past, farming-dependent rural areas have tended to be comparatively stable, traditional communities. Although the direct influence of agricultural activity on academic achievement has been investigated in only one study, its indirect influence via vocational agriculture programs has attracted considerable interest.

The one study that measured the direct relationship reported that farming income correlated positively with various academic outcomes. This association, however, disappeared when the influence of socioeconomic status was taken into account (DeYoung, 1985).

Vocational agriculture programs, formal curricula that prepare students for careers in agriculture, have been traditionally popular in farming and ranching communities. Some commentators (for example, Hobbs, 1987) look to vocational agriculture programs—and to the Future Farmers of America in particular—as exemplars of a quality of educational experience that they believe should be available to more communities. Hobbs, for example, credits vocational agriculture with developing leadership and entrepreneurial skills among students. These are the skills he believes are necessary to revitalizing rural economies (Hobbs, 1987).

Recent studies confirm that students believe their high school vocational agriculture programs positively influence their subse-

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quent educational plans. Stelhamer & Latham (1986) reported, for example, that most of the students in their Montana sample pursued postsecondary studies after graduation.

Agriculture is also one of the industries in which high school students most commonly hold part-time jobs (Charner & Fraser, 1988). These researchers report that part-time employment of up to 20 hours per week seems to have a positive effect on grades, though it does not appear to influence educational plans (i.e., aspirations).

The available data are not inconsistent with the hypothesis that agriculture exerts a positive influence on school outcomes in rural areas. According to Stephens (1988), however, the farm crisis of the 1980s may presage significant economic changes in agriculture. The effect of these new agricultural circumstances on school outcomes may be a topic of future investigations.

Manufacturing-dependent areas

Since the 1960s, economic development experts have recommended that rural communities induce manufacturers to relocate industrial plants in their regions. Rural communities that used this strategy successfully offered incentives, such as low-interest loans and tax forgiveness programs, that were attractive to manufacturers. Such trends are potentially harmful, at least in the short term, to school budgets. Is there a discernable relationship between recent manufacturing growth and school outcomes?

According to Rosenfeld, Bergman, and Rubin (1985), a study of economic growth from 1969 to 1979 found that, in general, a 4 percent increase in employment was associated with a 10 percent increase in educational attainment (years in school). However, the same increase in educational attainment was associated with a net *loss* of employment in manufacturing. These data suggest the possibility that manufacturing dependency and educational outcomes might be negatively related.

The evidence, however, is hardly conclusive, and Rosenfeld and colleagues (1985) also report that more recent data suggest the opposite conclusion. However, their data also show that manufacturing-dependent counties in the South experienced lower rates of economic growth than other counties.

Mining-dependent areas

Among the 2073 nonmetro counties classified by the USDA, fewer than 10% are mining-dependent counties (Stephens, 1988). For the most part, these counties are located in mountainous regions in the East and West (Bender et al., 1985). Of these, the Appalachian coal-mining regions have received the most attention in the educational literature.

Several studies conducted at the University of Kentucky have investigated the effect of mining economies on schooling, in particular the achievement of students (Bagby et al., 1985; DeYoung, 1985). Differences between Appalachian and non-Appalachian counties have been found to be significant. The differences seem most strongly associated with coal mining.

These researchers present data that suggest that mining economies exert a negative influence on student achievement. The negative influence persists even when the influence of socioeconomic status is held constant. For example, DeYoung (1985) found that high proportions of income derived from mining exerted a significant negative influence on student outcomes, whereas a similar effect was not observed for other types of economic activity (farming, manufacturing, and government). Other research is needed both to confirm these effects in Appalachia and to investigate such relations in mining-dependent counties elsewhere.

A topic to watch

Research on the impact of rural economic activity on school outcomes in rural areas is in its infancy. Popular concern for the contributions education and training make to economic life, however, indicates the need to understand better the way in which education and economic life influence each other.

The available studies suggest that the mutual influence of school outcomes and economic life can be fruitfully examined. The need to understand just how these mutual influences might work is perhaps more pressing in rural than in urban and suburban education, because the economic base of rural America has changed so dramatically since the 1950s (Stephens, 1988). Before schools can make a practical contribution to economic development in rural areas, the two-way relationship of education and economics will need to be much better understood.

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